

ARTÍCULO**FISCAL DECENTRALIZATION AND ECONOMIC GROWTH IN PERUVIAN REGIONAL GOVERNMENTS, 2007 – 2018****CARLOS GONZÁLEZ TARANCO ^A****ABSTRACT**

Aim of this paper is determine whether fiscal decentralization has generated economic growth in regional development of the Peruvian Economy, since decentralization process started; for that purpose, has been applied a data panel econometric model related to Regional Government as aggregate data. It's been found a positive relationship between both variables with some emphasis in short term, being significant current and capital expenditure and cash transfers.

JEL: C22; L91; R41**KEYWORDS:** Fiscal decentralization, regional government, Subnational Government a (SNG), data panel**INTRODUCTION**

Decentralization means to get back political, economic and administrative powers to Subnational Governments (SNG), as a result of a claim process population becoming in a General Government Bottom-Up Planning. Decentralization process is a public policy which has been applied in all the world and in specific in South America since 80's. (Carranza, L., Tuesta, D.; 2012)

Related to decentralization process in Latin America (LA) Economic Commission for Latin America and Caribbean (ECLAC) has published a document which refers that decentralization process has started past three decades increasing public spending of SNG. (Brosio and Jimenez (Edits.), 2012).

In administrative decentralization exists three different levels: Deconcentration which is referred when national government assigns responsibilities to decentralized public entities but public budget is managed by national government, Delegation is when SNG has the

right to decide priorities as a whole or a part of the public budget but with the commitment to give an accountability process; finally, Devolution, which is the situation that SNG has the right to manage independently their assignments about the public budget, including right to issue public debt but properly coordinated with finance and economic ministry. (Carranza, L., Tuesta, D.; 2012)

Certainly, Peruvian decentralization effectiveness is based in integral policies about political, fiscal and economic decentralization process, that kind of policies have been applied in the Second Generation Reforms context, in that sense aim of this article is to evaluate regional economic impact of fiscal decentralization process focused in SNGs as aggregated period 2007-2018.

Economic importance of the SNGs is referred about public expenditure was meaning 35.45% in 2007 while in 2018 has meant 40.40%, then SNGs public expenditure has increased its share just 5%, mainly due national government has kept some attributions about larger projects,

^A Teaching researcher of the Professional School of Economics of the Faculty of Economic and Financial Accounting Sciences of the San Martín de Porres University.

concessions, etc. But public budget model has been changed into results which budget programs has let reduce social and infrastructure gap in Peru, like for instance monetary poverty as average has been reduced since 33.5% in 2009 to 20.7% in 2016, in addition monetary extreme poverty has been reduced since 9.5% in 2009 to 3.8% in 2016 as percentage average of total population according National Statistics Institute and Informatics.

Chronical malnutrition in 5 years' children has been reduced since 28.5% in 2007 to 12.9% in 2017, but that public health problem is still in high percentage in rural areas which has meant 25.3% in 2017, despite the fact its important reduction since 45.7% in 2007, according INEI (Spanish abbreviations).

According Decentralization Annual Report 2017 related to advances in social and economic fields that analysis is based on:

- a. Percapita GDP and Poverty from 25 regions, 15 of them are below national average which is 18.7%, being poorest regions: Loreto, Ucayali and San Martin with percentage poverty 57.5%, 45.2% and 38.3% respectively.
- b. Anemia and chronical malnutrition in children with more than 6 until 36 months is present in 11 regions from 25 in total, such as: Amazonas, Ayacucho, Huancavelica, Huánuco, Junín, Loreto, Piura Pasco, Cusco, Puno and Ucayali.
- c. Homes without drinking water and sanitation are 12 from 25 regions in total, such as: Amazonas, Huancavelica, Huánuco, Junín, Loreto, Madre de Dios, Piura Pasco, Cusco, Puno, Tumbes, and Ucayali.
- d. Learning aim in elementary and high school indicator demonstrate that better results exist on the coast, followed by highlands and jungle, and best performance in elementary school than high school; but higher score is 53.4% and lower score is 5.3%.
- e. Formal employment by regions lower indicators are referred to: Huancavelica, Cajamarca and Ayacucho with 8.7%, 9.9% and 11.1% respectively while Callao, Lima and Ica has higher score such as: 43.7%, 41.5% and 37.8% respectively.
- f. Regional Competitiveness Ratio is lower in 15 regions of 25, being those regions: Amazonas, Ancash, Apurímac, Ayacucho, Cajamarca, Huancavelica, Huánuco, Junín,

Loreto, Madre de Dios, Pasco, Puno, San Martin, Tumbes, and Ucayali. (Ministries Board President, 2017)

About public expenditure since 2012 to 2017, total public expenditure has increased since 20.3% in 2012 to 22.8% of GDP in 2017, regarding to allocation between National and Subnational Governments, National Government has increase its participation from 58% in 2012 to 64% in 2017, while Local Government has decreased their participation since 22% to 17%, and Regional Government has decreased since 20% to 19% by same period. (Ministries Board President, 2017)

Analysis of public investment execution show us that Local Government has increased its participation with higher percentage than National Government with 45% in 2012 and 44% in 2017 while National Government has increased since 31% in 2012 to 37% in 2017; Regional Government has decreased since 24% to 19%. (Ministries Board President, 2017)

Statistical information analyzed let us to identify that poverty is located mainly in highlands and jungle that they have worst condition under national average with negatives effects in socioeconomic conditions of the population who are living in those areas.

Problem Statement

General problem

- Limitations to effectiveness of fiscal decentralization hasn't contribute to increase regional economic growth?

Specifics problems

- Current expenditure and cash transfers in Regional Governments doesn't contribute to sustainable economic growth?
- Public expenditure execution hasn't commit their budget goals which has affected effectiveness in reduction of regional and local needs and gaps.

Justification of the theme

Contribution of this research is about to identify limitations to effectiveness in SNG policies which affect fiscal decentralization and increase wellbeing of the population in poverty condition which are 20% of the Peruvian total population, almost 6 million persons will be the benefit of the social policies.

THEORETICAL FRAMEWORK

Empirical evidence

Fiscal decentralization and economic growth

One of the most important antecedents about those variables was raised by Robert Barro (1990) with his scientist article he has contributed to include public sector as one endogenous variables in long run economic growth, finding specific variables such as: size government, public income, public expenditure, capital and current spending, at the end of his article he has include a brief summary about empirical evidence from different authors that have supported its model.

Rodríguez-Pose, A and Kroijer, A (2009) wrote a paper about fiscal decentralization and economic growth in central and eastern Europe, period 1990-2004, analysis comprised 16 countries; they applied a data panel model with dynamic effects, finding that exist a negative relationship in two of three fiscal decentralization indicators with economic growth, but when they applied different time lags they identified that expenditure and transfers has negative relationship with economic growth but tax started negative changing into positive relationship with economic growth.

About this topic has been published an article about effectiveness of fiscal decentralization as strategy for Iran economic growth (Samimi, Petanlar, Haddad & Alizadeh, 2010), its relevant to mention their important contribution about its summary related to empirical studies in China, India, Pakistan and USA; they found a positive relationship between both variables.

Paper supported in data from OECD countries evaluate contribution of fiscal decentralization in economic growth of those countries by the period 1990 – 2005, importance of this paper is about its analysis includes fiscal expenditure and revenues in addition variables about administrative and political differences; conclusion is referred to exist a negative relationship between fiscal decentralization and economic growth, despite inclusion of administrative and political variables which its significance was weaker. (Rodríguez-Pose and Ezcurra, 2011)

Additional contribution of this paper is summary about 12 authors whose have written about this topic with different findings since positive,

negative, significant and non-significant and hump shaped results.

Another approach about fiscal decentralization and economic growth in OECD it's an article written by Bodman (2011) who has included variables related to measure SNG efficiency and its human capital level, in addition has identified different effects between federal stated and unitary states, these latest has higher growth rate.

Analysis about fiscal decentralization and health care services in China during period 1980-2003, authors: Yinghua and Rui (2011) found that fiscal decentralization hasn't had a positive effect in Infant Mortality Rate (IMR) as indicator of health care service through Ordinary Least Square and Panel Feasible Generalized Least Square Model.

Blöchliger, H., B. Égert and K. Bonesmo Fredriksen (2013), wrote an interesting paper about fiscal decentralization process in OECD countries from 1995 to 2011, and its relationship with economic growth, public investment and performance in educational systems, for that purpose they applied a panel data with dynamic effects. Their findings where about: expenditure and revenues has positive relationship with economic activity, but they found that more decentralized countries have weaker relationship with GDP, countries have invested more in human capital than physical capital which have let them have obtained best outcomes in performance of educational systems according international students assessments (PISA).

Interesting analysis about fiscal decentralization and poverty was written by von Braun and Grote (2013), those authors developed asses about fiscal decentralization effectiveness in poverty reduction policy, identifying that scope of types of decentralization comprises: political, administrative and fiscal approaches, mainly effectiveness depends on an integrated policy. Empirical evidence on international experience has demonstrated that most of the countries have applied administrative decentralization through cash transfers and increasing health and education public services with the purpose to reduce income inequality but lack of political address, expenditure and revenues parameters according its goals and a baseline about poverty, have generated corruption and democratic institutional weakness.

Yushkov, A. (2015) wrote an interesting paper about *Fiscal decentralization and regional economic growth: Theory, empirics, and the Russian experience*, which comprises a worthy contribution about specialized literature systematization about fiscal federalism effects, with a good summary about Musgrave and Oates.

Paper objective is to analyze theoretical and empirical relationship between fiscal decentralization and economic growth in Russia Regions 2005-2012, econometric model used is Panel Data with fixed effects, and main conclusions are related to excessive expenditure decentralization within the region, which is not accompanied by regional revenue has a negative relationship with economic growth, while fiscal transfers has become into a positive relationship with economic growth which reveals dependence and inefficiency in regional revenues management specially during restrictions due macroeconomic context.

Llorca-Rodríguez, C.M., García-Fernández, R.M. and Sáez-Lozano, J.L. (2017) wrote a paper which comprises an analysis based on countries sample such as: Africa, Asia, Eastern Europe and Latin America such as: Albania, Argentina, Botsuana, Bulgaria, Chile, China Continental, Colombia, Croatia, Czech Republic, Estonia, Hungary, India, Indonesia, Iran, Islamic Republic, Kazakhstan, Kenia, Leetonia, Lithuania, Poland, Rumania, Slovak Republic, Thailand y Uganda. Paper conclude that fiscal decentralization of spending in education, health, housing, and social protection contribute to reduce poverty.

Objectives

- Evaluate economic effect of fiscal decentralization in regional economic growth through redistribution income with cash transfer and current and capital public spending, Period 2007-2018.

Specific objectives

- Evaluate impact of cash transfers in short run redistribution income policy.
- Determine if current public spending has progressive effects in short run economic growth.

Hypothesis

- Fiscal decentralization has had a positive relationship with regional economic growth during period 2007-2018.

Specific hypothesis

- Cash transfers has progressive effects in short run redistribution income policy.
- Current public spending has progressive effects in short run economic growth.

METHOD

Method considered for this research has been a random effects model for Panel Data, results obtained has been according expected results, but with some specifics meanings such as:

- In short term economic growth, current expenditure has more significant effects than public expenditure.
- Economic growth contributes to reduce poverty.
- Education expenditure and health expenditure don't contribute to regional economic growth.

According with analysis exposed has develop following model:

Per Capital GDP = f(CURRENT EXPENDITURE, CAPITAL EXPENDITURE, UNSATISFIED BASIC NEEDS: POVERTY, PUBLIC EXPENDITURE FOR EDUCATION, PUBLIC EXPENDITURE FOR HEALTH CARE SERVICES, CASH TRANSFERS)

In order to make consistency an easy analysis and interpretation every endogenous variable has been considered in per capita terms.

Data sources was extracted from National Institute of Statistics and Informatics (INEI by its spanish abbreviations) in addition from Economic and Finance Ministry: Friendly Consultant (Consulta Amigable in Spanish), sample of period of time annual observations from 2007 to 2018).

RESULTS

To estimate the econometric model, it has been used statistical software package E Views 9, applying a fixed effects Panel Data Model with 300 observations, sample is a balance panel which results are summarized in the following table:

Table 1: Econometric results		
Econometric model	Fixed effects	
Model specification	Where LGDP is the Peruvian gross domestic product, LCE is the Peruvian government current expenditure, LKE is the Peruvian government capital expenditure, LP is the percentage of population with unsatisfied necessities, LPEE is the public expenditure for education, LPEH is the public expenditure for health and LCT is the cash transfers. All the variables are in per capita terms. Finally, u is the disturbance term and α_i for all i are the fixed regional effects with respect to Lima (the most developed region in Peru).	
Sample:	Annual values for each variable. The period of data was 2007 – 2018.	
Variable	Coefficient	P-value
LCE	0.3296	0.0000***
LKE	0.1468	0.0013***
LP	-0.0858	0.0463**
LPEE	0.0654	0.3345
LPEH	0.0551	0.4141
LCT	0.0137	0.0034***
D0 = LIMA	5.7894	0.0000***
D1 = AMAZONAS	-0.4167	0.0014***
D2 = ANCASH	0.0136	0.0078***
D3 = APURÍMAC	-0.7893	0.0026***
D4 = CAJAMARCA	-0.6081	0.0135**
D5 = CUSCO	0.2020	0.0359**
D6 = HUANCavelica	-0.6899	0.0246**
D7 = MADRE DE DIOS	0.2216	0.0101***
D8 = MOQUEGUA	0.9345	0.0000***
D9 = SAN MARTÍN	-0.3489	0.0355**
Model statistics		
Statistic	Test value	P-value
R-squared	0.9649	-
F-statistic	195.4567	0.0000***
Jarque-Bera normality statistic	9.3562	0.0935*
Hausman statistic	16.4678	0.0018***
White heteroscedasticity statistic	10.4433	0.0899*
LM autocorrelation statistic	17.3564	0.0681*
Source: Author's elaboration		
Note: 1) * Denote statistical significance at 0.10 level. ** Denote statistical significance at 0.05 level. *** Denote statistical significance at 0.01 level. 2) I only consider the region dummies who were statistical significant in the econometric estimation. Therefore, only nine regions showed different growth rate level versus Lima's value.		

There were significant 4 variables such as: current expenditure, capital expenditure, unsatisfied basic needs and cash transfers; and non-significant public expenditure for education and health care services.

We have considered Lima capital as reference category to compare increases/reductions in the growth rate per capita GDP with respect to Regional Governments due its statistical significance.

Despite the fact that non significance of certain variables, this estimated model does not show statistical problems such as heteroscedasticity, autocorrelation and non-normality of errors.

Relevance of current expenditure and cash transfers is a topic to be evaluated its effects due long term public debt risk.

Certainly biggest impact of current expenditure requires a deep evaluation by its components because personnel public spending could be mean a risk of political clientele which its final effect would be to weak regional democracy, in that sense regional decentralization has to be applied including a political reform and an integrated fiscal, administrative and political decentralization long term plan.

DISCUSSION

According with previous results: current and capital expenditure seems to main determinants of annual Per Capita Regional GDP variation, followed by cash transfers.

It's will be required future research to investigate why current expenditure has strongest effect in per capita regional GDP.

Unsatisfied basic needs reduction should contribute to increase per capita GDP, that is why its negative its relationship, however lack of long term plans about poverty reduction policy seems to maintain poverty levels in same condition for a long time.

Public expenditure in education and health care services in regional governments are non-significant due to best quality public service are concentrated in Lima capital and main Peruvian cities which it generates internal migration into those cities. Then a pending agenda is decentralizing public services about education and health care with high quality about human

resources, infrastructure and equipment with high technology as a kind of challenge to build a sustainable economic growth rate in long term.

ACKNOWLEDGEMENT

Special acknowledgement to Bach. Cesar Augusto Albarracin Calderon whose affiliation is with London Schools of Economics and San Ignacio de Loyola University.

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